DOCUMENT RESUME

ED 356 861 PS 021 185

AUTHOR Loh, Shoou Ai; Sim, Wong Kooi
TITLE The Development of Bilingual Ability in Pre-School Children. NIE-BvLF Project Sub-Study.
INSTITUTION Institute of Education (Singapore).
PUB DATE 20 Feb 93
NOTE 32p.; Paper presented at the NIE-BvLF Regional Seminar (Singapore, February 20, 1993).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Bilingualism; Bilingual Students; Chinese; English; *Family Environment; Foreign Countries; *Language Acquisition; *Language Aptitude; Mandarin Chinese; Parent Influence; *Parent Role; *Preschool Children; Preschool Education
IDENTIFIERS *Singapore

ABSTRACT

To investigate the actual and possible roles of parents in the development of preschoolers' bilingual ability, this study examined the home environments and bilingual ability of Singapore preschoolers. A total of 378 children, aged 5 and 6 years, were divided into 2 groups and individually interviewed. Children in one group began the interview in English; the other group began the interview in Chinese. During the interview, children were tested in English and Chinese in the areas of vocabulary, listening comprehension, story comprehension, translation, and verbal fluency. Children also completed a Home Language Environment Questionnaire. The children's parents also completed questionnaires. Analysis showed that children who perceived their home environment to be predominantly bilingual produced optimal performances in both English and Chinese language tests. Most parents were actively involved in helping their children develop language ability either directly or indirectly. Results also revealed that while children performed well in all language tests, there were some common areas of weakness in both languages, as well as important differences in certain corresponding aspects of English and Chinese, which could affect interlanguage transfer. (MM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED356861

NIE-BvLF Regional Seminar,
20 February, 1993.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☒ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY
Loh Shoou Ai
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

NIE-BvLF PROJECT SUB-STUDY ON THE DEVELOPMENT OF BILINGUAL ABILITY IN PRE-SCHOOL CHILDREN

Mrs Loh Shoou Ai & Prof Sim Wong Kooi
National Institute of Education

1. INTRODUCTION

This sub-study looks at the bilingual ability of Singapore pre-schoolers of ages 5 and 6. Childhood bilingualism was chosen because it has become a prevailing area of concern among teachers, parents and the public in recent years. In Singapore, children are encouraged to be bilingual. The government has given convincing political, social and economic reasons, why her people should be bilingual. Furthermore, there is hardly any research on childhood bilingualism in Singapore.

From age 3 onwards, if not earlier, children are taught two languages - English and a mother tongue. In spite of such early exposure, children are having problems managing two languages in pre-school. This study, therefore, focuses on pre-schoolers' bilingual ability as this aspect warrants our taking a closer look. This study would also complement the earlier studies in Phases 1 and 2. In Phase 1, we collected baseline data of many aspects of pre-schoolers' cognitive, mathematical, social and language development. Although we looked at language development, we did not specifically look at the bilingual dimension. In the Phase 2 centre-based study, we looked at how we can help some children from a few PAP centres improve their learning of English. Given the current interest and the NIE-BvLF project as a whole, a study of childhood bilingualism seems a natural and logical development of the 10-year research.

PS 021185

2. OBJECTIVES OF STUDY

Since Phase 3 of the project is focused on the home, the main objective of this sub-study is to investigate the actual and possible roles of parents in the development of bilingual ability of pre-school children.

The research questions are as follows:

1) Are K2 (5-6 year old) children able to handle the two languages required of them in pre-schools?
2) To what extent are parents involved in helping their children to learn two languages?
3) How are the perceived language environments at home related to children's performance in two languages?
4) How can parents be involved effectively in helping their children learn two languages?

BEST COPY AVAILABLE

Naturally, we make some assumptions regarding how children become bilingual, such as the following:

1) Parental interest and support can make a difference in a child's language learning and achievement.
2) Language is best learnt through interesting and meaningful activities.
3) Given exposure and opportunity for usage, most children should be able to learn two languages.
4) Whether children can learn two languages equally well depends on whether the home environment is equally conducive to the use of the two languages

As it was apparent that the philosophy of the Bernard van Leer Foundation was more closely associated with helping disadvantaged, or less advantaged, children, we did not set out to study childhood bilingualism on a representative population. At least we did not include children from the private kindergartens which are generally attended by children from more advantaged homes. Furthermore, the study of bilingual ability is confined to English and Chinese only, since it would require much greater manpower resources and a larger sample of kindergartens in order to include the other minority languages. Hopefully, our findings may have implications for bilingualism involving the other languages, or else, they may encourage follow-up studies to be conducted subsequently.

3. RESEARCH METHODOLOGY

This is an empirical study involving actual centre-based testing, child interviews and surveys. All children were interviewed on a one-to-one basis on specially designed tasks and a Home Language Environment Questionnaire. Their respective parents and pre-school centres were also given some questionnaires. Each child would require approximately 2-3 hours in total to complete all the activities.

In order to minimise "practice effect", we divided the children into two groups. One group started the tests in English and the other group in Chinese. In this way, there would not be a "practice" of one language influencing the performance in another.

Upon completion of data collection, all the data were subjected to statistical analysis. Findings and recommendations for further action are discussed in this paper.

4. RESEARCH TASKS

There were five areas that were tested in English and Chinese. They were: a) Vocabulary, b) Listening Comprehension, c) Story Comprehension, d) Translation, and e) Verbal Fluency. A detailed account of each area/section is given in Appendix 1.

5. TIME FRAME

Jan-Nov 91	:	Development of instruments, including questionnaires, interview schedules, recording forms and language tasks.
Nov-Dec 91	:	Arrangements with centres for their involvement, including selection of sample of children and their parents for the study.
Jan 92	:	Training of research assistants.
Jan-Apr 92	:	Data collection.
May-Dec 92	:	Data analysis and preparation of report.
Feb 93	:	Dissemination of findings and recommendations.

6. SAMPLE OF STUDY

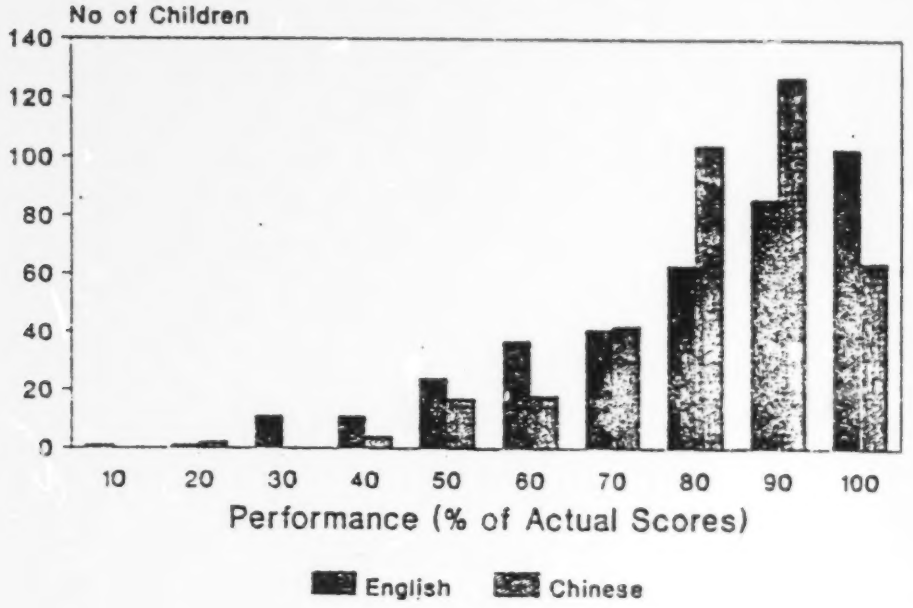
Eight pre-school centres were involved and more than 400 parents and their children participated initially in the sub-study. Eventually, we could use only 378 complete sets of parent and child data because of one of the following reasons: 1) Child attrition, and 2) Incomplete returns in questionnaire or tasks. In designing the sample, we started off trying to involve about 50 children from each centre. But, as it turned out, some centres had more and others had fewer children. However, we tried to ensure that the numbers were as comparable as possible especially in terms of centre types e.g People's Association Party (PAP), People's Association (PA) and Preparatory Year (PY) of the Ministry of Education. Although the outcome was not ideal, it was adequate for our purpose.

7. MAIN FINDINGS

7.1 QUESTION 1: ARE OUR 5-6 YEAR OLDS ABLE TO HANDLE THE TWO LANGUAGES REQUIRED OF THEM IN PRE-SCHOOLS?

On the whole, the children performed quite well in both the English and Chinese tests and slightly better in Chinese than in English (see Figure 1). There were in fact only 3 (0.79%) who scored less than 50% for both English and Chinese, as compared with 310 (82%) who scored more than 50% for both English and Chinese. There were 31 (8.2%) children who scored 100% for both English and Chinese tests. 89% of the children had obtained between 71% - 100% marks in the Chinese tests and 78% of the children had obtained similar marks in the English tests. On the other hand, there were some children who did very well for one of the language tests and very poorly for the other language test. Whereas 48 (12.69%) scored more than 50% in Chinese and less than 50% in English, only 20 (5.29%) scored less than 50% in Chinese and more than 50% in Chinese.

Fig 1: Overall Performance in English & Chinese Language Tests



How did we compute the marks? We assigned values for the correct responses, so a child with more correct responses was awarded more marks than one who had fewer correct responses. The maximum score for all the 5 task areas was 164 (in one language). For more details see **Appendix 1.**

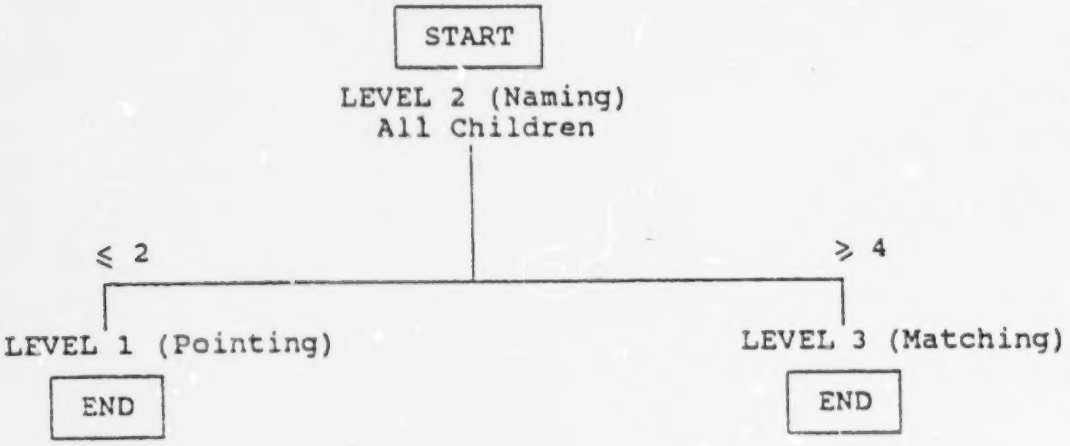
7.1.1 Vocabulary

Children were given 9 categories of vocabulary items e.g., *Animals, Food* and *Utensils.* In each category, there were 6 items. All in all, there were 54 items (see **Appendix 1**). All the items were tested in English and Chinese. These are categories that pre-schoolers are very familiar with and they learn them formally or informally.

There were also three levels of difficulty. In Level 1, the child had to point to the pictures that corresponded with the words mentioned. In Level 2, the child were required to name the objects. This was deemed to be of "average" difficulty. In Level 3, the child had to match the words to the pictures; only children who could read were able to do this. Therefore, this was regarded as an "advanced" level.

When testing, each child started off with Level 2. If s/he had two or fewer than two items correct, s/he was required to move down to Level 1. Conversely, if the child had four or more than four correct, s/he would move up to Level 3. In this way, we could find out where each child was at. **Figure 2** illustrates the sequence:

Figure 2: Admininstrative Procedure for Vocabulary Tasks.



Scoring for each correct response
Level 1 (6 items): 1 mark each (max 6 marks)
Level 2 (6 items): 2 marks each (max 12 marks)
Level 3 (2 items): 3 marks each (max 6 marks)

GENERAL FINDINGS

When the scores of all the 3 Levels were taken together as an aggregate, the mean score for the English vocabulary was 94.39 and for the Chinese vocabulary it was 97.2. Performances in the English and Chinese tests were as follows:-

Table 1: Overall Performance in the Vocabulary Tasks.

Criteria	English	Chinese	Category
Mean Score	94.39	97.2	-
Highest Mean in Category	12.26	12.84	Animals Body Parts & Actions
Lowest Mean in Category	9.1	6.37	Utensils Shapes

In the English tests, the highest and lowest mean scores for the individual categories were 12.26 (standard deviation was 2.26) and 9.1 (standard deviation was 4.27) respectively. In other words, children found the vocabulary items in the *Animals* category easiest and the *Utensils* category toughest. The highest number of children (354) attempted Level 3 for the *Animals* category, and lowest number of children (215) attempted the *Utensils* category.

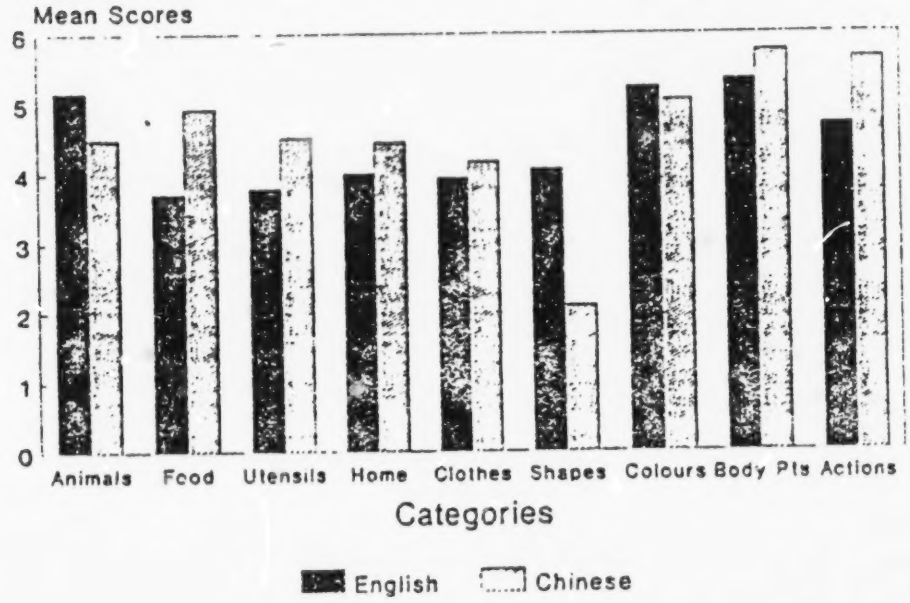
In the Chinese tests, the highest and lowest mean scores for the individual categories were 12.84 (standard deviation was 1.64) and 6.37 (standard deviation was 3.53) respectively. The highest number of children (about 367) attempted Level 3 for *Body Parts* and *Actions* categories; the lowest number (98) children attempted the *Shapes* category. This corresponded with the highest and lowest mean scores not only among Chinese scores but also in overall scores.

On the whole, the children did quite well. About 97% of children attempted Level 3 at least once and only about 17% had to do Level 1 at some point. Some categories e.g., *Animals* and *Body Parts* seemed easier than others. Children also performed better in the Chinese tests.

PERFORMANCE AT DIFFERENT LEVELS

All the 378 children started with Level 2. The highest mean scores for English and Chinese were 5.34 and 5.75 respectively. They were from the same category which was *Body Parts* category. Likewise, the lowest mean scores were 3.71 for English and 2.09 for Chinese. They were from the *Food* and *Shapes* categories, respectively. **Figure 3** shows the mean scores for the English and Chinese tests:

Figure 3: Mean Scores of Individual Categories in Level 2



It is apparent that children do not learn the same categories of vocabulary to the same extent in English and Chinese. While both languages seem to expose them to the largest number of words on *Body Parts*, they learn fewer words on *Food* and *Actions* in English, and fewer words on *Shapes* and *Animals* in Chinese.

Children who did poorly for Level 2 were required to do Level 1. In the English tests, only 14 children did the *Animals* category (smallest number) and 118 children did the *Utensils* category. *Animals* category had the highest mean score - 4.92, and the *Foods* category had the lowest mean score - 1.84. In the Chinese tests, only 2 children had to do Level 1 for the *Body Parts* category; whereas 221 children were required to do the *Shapes* category. These were the minimum and maximum numbers respectively. As for the mean scores, the *Body Parts* category enjoyed the highest score of 5.5 and the lowest mean score was 2.86 of the *Clothes* category.

For Level 3, the most advanced level, the largest and smallest number of children qualified for the English tests were 354 and 215 respectively. The former group was from the *Animals* category and the latter group from the *Utensils* category. The highest and lowest mean scores for Level 3 as a whole were 1.45 and 1.09 respectively. The former was from the *Food* category and the latter from the *Shapes* category. In the Chinese tests, 367 (highest number) qualified for Level 3 for the *Body Parts* and *Actions* categories, and 98 (the lowest number) qualified for the *Shapes* category. The highest and lowest mean scores were 1.62 and 0.98 and they were from the *Animals* and *Actions* categories respectively.

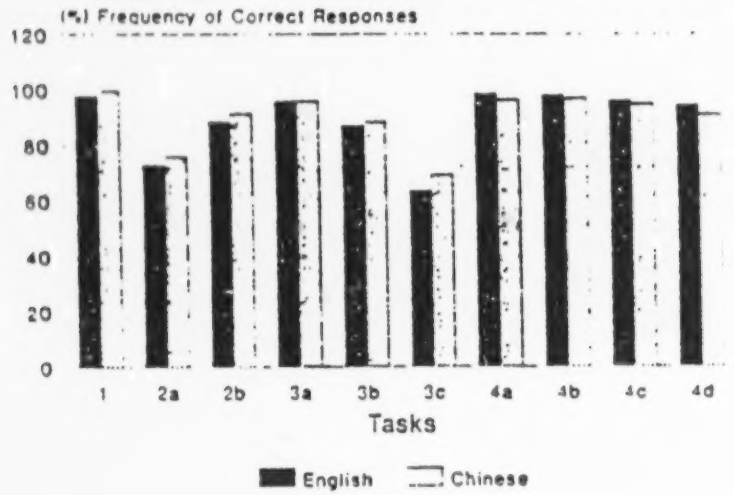
7.1.2 Listening Comprehension

In this section, we were finding out children's receptive, rather than productive, language. At pre-school level, it is the understanding of the spoken language. In this research, we required the children to carry out some tasks that were arranged in a hierarchy from simple to complex tasks. For example, the first task was the simplest - '*Stand Up* (1)', and the last task was more complex - '*Take this crayon* (1) *and paper* (2) *and draw in the eyes* (3). *Colour the picture* (4)' (Refer to Appendix 1 for the complete tasks). We awarded one mark for each correct reponse. If a child gets every part of the instruction correct, s/he gets four marks. The maximum score for this section is 10 for each language.

FINDINGS AND OBSERVATIONS

The highest mean scores for the English and Chinese tasks were 8.91 and 8.98 respectively. Performance in the two languages appeared to be very similar. With the exception of the second task where the children had difficulty with the word '*point*' and the third task where many did not understand that the plural term '*them*' included both '*the paper*' and '*the box*', the children were better with the other tasks, including the relatively long instruction in the fourth task. The detailed findings were as follows:

Figure 4: Performance in English and *Chinese* Listening Comprehension Tasks.



How did the children perform in whole instruction as compared with instruction in parts? Table 2 below displays the findings.

Table 2: Performance in Whole Instruction in English and *Chinese*

Tasks	No. (& Percent) of Correct Responses
Qn. No.'	
2. Point to the cup	E: 268(70.9) C: 281(74.3)
3. Take the paper, put it in the box and give them to me.	E: 224(59.3) C: 238(63.0)
4. Take this crayon and paper and and draw in the eyes. Colour the picture.	E: 349(92.3) C: 332(87.8)

It may be concluded that there is hardly any difference in the pattern of responses, which appears to depend mainly on the nature of the listening comprehension task, rather than on whether English or Chinese is used. It is also apparent that the children's ability to cope with Whole Instruction does not depend on the length of the sentence, but rather on the component parts. Hence, when some children had difficulty in understanding the words *'point'* and *'them'* in the second and third tasks, respectively, their scores for the whole instruction for these tasks were much lower than that for the task, which comprises more parts.

7.1.3 Story Comprehension

It was considered important that we eliminate any possibilities of 'practice effect'. For that reason, we wanted to use an original story for testing story comprehension. We used the story which was used in the first phase of the BvLF project; the children of that phase had already outgrown the pre-school years. The title of the story was '*Mei Mei's Pussy Cat*'. We also had to write a new story of comparable difficulty for the Chinese test so as to ensure that there would be no 'practice effect' between English and Chinese tests or vice versa. The Chinese story was entitled: 小华的生日

In the test situation, the researcher read the story to the child and stopped at appropriate points e.g., at the end of a page, during story reading to ask questions. This was preferred over asking questions only at the end of the story for the following reasons: a) the children were very young and might have short attention span; and b) we were testing for comprehension and not memory.

FINDINGS AND OBSERVATIONS

The children did better for the Chinese story comprehension. The mean score was n 5.34 as compared with 3.89 for the English. The maximum score for each language was 6. Table 3 below shows how the children performed in the English test.

Table 3: Performance in English Story Comprehension

Questions	No. (& Percent) of Correct Responses
1. What is the name of Mei Mei's pussy cat?	259 (68.5)
2. Where did Kitty go?	249 (65.9)
3. Why did Mei Mei cry?	200 (52.9)
4. Who telephoned Mei Mei?	175 (46.3)
5. What did Ali want to do?	171 (45.2)
6. What must Mei Mei always remember to do?	252 (66.7)

The children did fairly well for questions 1, 2 and 6 in the English test. They did not do well for the other questions because they were required to infer from the direct speech. They were, therefore, required to understand the story better.

It is possible that the children comprehended the Chinese story better mainly because of their greater familiarity with the situation depicted in the Chinese story than

in the English story. There are however some inconsistencies in their performance in some questions. For example, only 82.8% of children had question 1, which is a very straightforward one, correct, as compared to their performance in questions 4 and 6 (with 94.4% and 89.9%, respectively, correct), which required them to make inferences from direct speech. Table 4 shows the results of performance in Chinese:

Table 4: Performance in Chinese Story Comprehension

Questions	No. (& Percent) of Correct Responses
1. 今天是谁的生日?	313 (82.8)
2. 姐姐送什么礼物给小华?	228 (60.3)
3. 皮球是谁送的?	360 (95.2)
4. 当人家送礼物给小华时, 小华怎么说?	357 (94.4)
5. 爸爸去了哪里?	268 (70.9)
6. 小华最喜欢哪一样礼物?	340 (89.9)

7.1.4 Translation

After the stories, children were asked to translate words or phrases from the stories into the other language. In other words, if it was a story in English, they would translate the words into Mandarin and vice versa. We believe that it was more meaningful to ask children to translate words from a familiar context.

We selected words, phrases and a sentence for each language test. A single word was easier to translate than phrases or sentences in the tests. Like the Listening Comprehension tasks, where there were a few parts to a question, we awarded one mark for each correct part.

FINDINGS AND OBSERVATIONS

For translation from English (words selected from the English story) to Chinese words, the results are as follows:

Table 5a: Performance in Translation from English to Chinese

Questions	No. (& Percent) of Correct Responses
1. Play	313 (82.8)
2. Telephone	313 (82.8)
3. Happy	247 (65.3)
4. Close the door	
a) Close	329 (87.0)
b) the door	335 (88.6)
5. Mei Mei has a cat	
a) Mei Mei	183 (48.4)
b) has	195 (51.2)
c) a	81 (21.4)
d) cat	259 (68.5)

The mean score for this task was 5.97. The maximum score for this section, whether in English and Chinese, was 9.

How did the children perform for questions 4 and 5 as a whole as compared to parts? Table 5b below shows the results.

Table 5b: Translation of Phrase and Sentence from English to Chinese.

Tasks	No. (& Percent) of Correct Responses
Qn. No.	
4. Close the door	323(85.4)
5. Mei Mei has a cat	57(15.1)

For translation from Chinese (words selected from the Chinese story) to English words, the results are as follows:

Table 6a: Translation from Chinese to English

Questions	No.(& Percent) of Correct Responses
1. 吃	313 (82.8)
2. 喜欢	225 (59.5)
3. 忘了	137 (36.2)
4.	
a) 谢谢	334 (88.4)
b) 爸爸	301 (79.6)
5.	
a) 大家	157 (41.5)
b) 要	180 (47.6)
c) 吃	267 (70.6)
d) 蛋糕	280 (74.1)

The mean score of this task was 5.8. A further question to ask is how many children had the questions 4 and 5 as a whole correct? **Table 6b** below shows the results.

Table 6b: Translation of Phrase and Sentence from Chinese to English.

Tasks	No. & Percent of Correct Reponses
Qn. No.	
4. 谢谢爸爸	290(76.7)
5. 大家要吃蛋糕	126(33.3)

As in the case of Listening Comprehension, the children's problems in translating phrases and sentences are associated with their problems in translating certain component words. In the Translation task, it is the target, rather than the source, language that is critical. Children might be equally familiar with certain words or phrases in one language, but their ability to translate them into another language depends largely on their relative familiarity with the corresponding words or phrases in the other language. Thus, whereas the indefinite article '*a*' is a simple word in English, when translated into Chinese, it becomes more difficult, as the numerical coefficient needs to be specified. This accounts for the relatively lower percentage of correct response (21.4%) for its translation. By contrast, the definite article '*the*' is not even translated when '*the door*' is translated into Chinese, resulting in a higher percentage of correct response (88.6%), as '门' is a relatively simple word in Chinese. Likewise, children might be quite familiar with the word '忘了', but the corresponding word in English, '*forget*', is perhaps less familiar, resulting in only 36.2% of children getting the translation correct. That children also obtained a lower percentage for translation into English for the word '大家' (41.5%) than for the word '蛋糕' (74.1%) is probably because '*everybody*' is a less familiar, or more difficult, word than '*cake*'.

7.1.5 Verbal Fluency

Children were given four picture cards in a sequence to tell a story from. The picture cards depicted scenes that they could relate to, e.g., going out with parents. When the cards were laid on the table, we asked the children some questions which helped them to get "warmed up" and also to focus.

FINDINGS AND OBSERVATIONS

Again, the performance in Chinese was better than in English. The former had a mean score of 8.25 and the latter 7.03. **Table 7** shows the detailed performance in English and Chinese:

BEST COPY AVAILABLE

Table 7: Performance in the Verbal Fluency Task (English and *Chinese*)

Criteria	No. of Children (%) (Poor)	(Fair)	(Good)
1. Intelligibility	E:22.2	33.3	44.4
	C: 6.3	28.8	65.9
2. Grammatically Correct	E:73.5	18.8	8.5
	C:67.7	25.1	7.1
3. Complete Sentences	E:60.1	35.4	4.5
	C:36.5	40.7	22.8
a) Level 1	E: 1.6	0	0
	C: 0.5	0	0
b) Level 2	E:16.4	0.3	0
	C: 1.6	0.3	0
c) Level 3	E:22.2	4.5	0
	C: 8.2	1.8	0
d) Level 4	E:14.8	30.7	0
	C:23.8	38.4	0
4. Good Pronounciation	E: 8.2	26.7	65.1
	C: 1.9	7.9	90.2
5. No Probing	E:52.4	26.8	22.8
	C:36.2	29.1	36.2
6. No Code-switch	E: 4.5	14.3	81.2
	C: 2.9	44.4	52.6
7. Relevance	E: 5.3(N)		94.7(Y)
	C: 1.3(N)		98.7(Y)

NOTE:
Level 1: No response or inappropriate response
Level 2: Single word/s
Level 3: Two-word stage or strings of single words
Level 4: Expanded telegraphic speech, increase communication, is able to express/control ideas

While the children were clearly more intelligible, used more complete sentences and pronounced better in Chinese than in English, they were less susceptible to code switching in English than in Chinese. They were particularly weak in grammar for both languages.

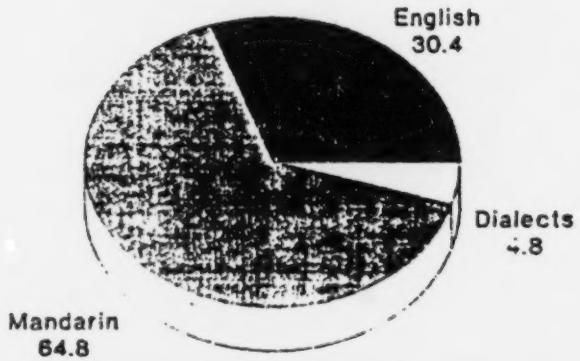
7.2 QUESTION 2: TO WHAT EXTENT ARE PARENTS INVOLVED IN HELPING THEIR CHILDREN TO LEARN TWO LANGUAGES?

From the parent and child questionnaires, we could find out about parental involvement in their children's learning of two languages. Of the 378 families selected, more mothers attempted the questionnaires when they were brought home.

7.2.1 Languages used between parents and child

We asked parents "What languages do you use most often with the child?", and "What language does your husband/wife use most often with the child?" The responses to the first question were as shown below, with Mandarin being most often used by about two-thirds of parents:

Figure 5: Language Used Most Often with the Child
(Frequency in Percentage)



The second question elicited the following responses:

Table 8: Language Spouse Used Most Often with the Child

Language	No.(& Percent)
English	115 (30.4)
Mandarin	241 (63.8)
Dialects	22 (5.8)

We did a cross-tabulation to find out if parents have separate language roles which could promote bilingualism e.g the "*one-parent-one-language*" situation.

Table 9: Cross-tabulation of Two Parents' Languages with the Child

Q1\Q2	ENG	MAN	DIA	OTH	TOT
ENG	95	17	3	0	115
MAN	17	221	7	0	245
DIA	3	3	12	0	18

FINDINGS & OBSERVATIONS

For 328 (i.e. 95 + 221 + 12) pairs of parents, there was no division of language roles, where both parents used the same language most often with their children. There were 34 pairs of parents who had division of roles, where one spoke English and the other spoke Mandarin. The latter provided support for their children's bilingual learning as it provided consistency and reinforcement for their learning. Other parents might not have adopted this strategy - "*one-person-one-language*" - but some probably used another strategy - "*one-person-two/multiple-languages*". Our findings, however, did not show either of the strategies to be superior. The following table shows the cross-tabulation for the following questions.

Question 1: *What language do you use most often with the child?*, and Question 3: *What other language(s) do you use with the child?*

Table 10: Cross-tabulation of Language Used Most Often with the Child and Other Languages Used with the Child

Q1\Q3	ENG	MAN	DIA	OTH	E&M	E&D	E&O	M&D	TOT
ENG	16	68	12	2	0	0	0	17	115
MAN	87	68	64	1	0	25	0	0	245
DIA	2	8	5	0	3	0	0	0	18
TOT	105	144	81	3	3	25	0	17	378

For the 115 parents who spoke English most often with their children, 99 of them spoke other languages with their children. Similarly, for the 245 parents who spoke Mandarin most often with their children, 177 of them spoke other languages as well. Of the 18 who spoke Dialects most often, 13 of them spoke other languages too. As a matter of fact, the number of parents who spoke only one language or dialect with their children is in the minority (23.54%). It may be observed that 200 (52.91%) of parents used both English and Mandarin, but most of them probably do not give equal or balanced emphasis to both languages, although many are probably perceived by their children as providing a largely Bilingual environment.

7.2.2 Languages used between Parents and other Adults

Between parents, the languages used were as shown below:

Table 11: Language(s) Used Between Parents

Language	No.(& Percent)
English	94 (24.9)
Mandarin	177 (46.8)
Dialect(s)	107 (28.3)

With other adults, the following languages were used:

Table 12: Language(s) used Between Parent and Other Adults

Language	No.(& Percent)
English	61 (16.1)
Mandarin	130 (34.4)
Dialect(s)	186 (49.2)
Others	1 (0.3)

In comparison with language(s) used most often with children (Figure 5 and Table 8), the language(s) used between parents and between parents and other adults consisted quite substantially of Dialect(s) (28.3% and 49.2%, respectively). This is a very positive indication of the deliberate attempts of parents to avoid using Dialects with their children, even though they seem to be more comfortable with, and to use, Dialects among themselves and with other adults, and use Mandarin wherever possible.

7.2.3 Types of books that parents bought and/or borrowed

Most parents were willing to buy and/or borrow books for their children. 97.1% of them bought books. What types of books did they buy?

Table 13: Types of Books Bought

Type	No.(& Percent)
English Story	226 (59.8)
Chinese Story	147 (38.9)
Alphabet ABC	171 (45.2)
Numbers 123	156 (41.3)
English Writing Exercise	170 (45.0)
Chinese Writing Exercise	162 (42.9)

About 53.7% of parents borrowed books for their children. The percentage was less than those who bought books. This complements findings in Table 13 because some parents who bought books might not see the need to borrow books.

Table 14: Types of Books Borrowed

Type	No.(& Percent)
English Story	59 (15.6)
Chinese Story	32 (8.5)
Alphabet ABC	4 (1.1)
Numbers 123	6 (1.6)

Whether in terms of books bought or borrowed, it is evident that more books were in English than in Chinese. While this situation could represent the fact that there are more books in English than Chinese in the market, it could also suggest that, since Mandarin is spoken more often than English, some parents are deliberately attempting to make the home environment more Bilingual.

7.2.4 Parents' Direct Involvement with their Children

About 77.8% of parents read to their children. Of this, 35.7% read to their children in English and Mandarin, 32% read to them in English only and 32% read to them in Mandarin only.

About 72% of parents told stories to their children. Of this, 34.2% told stories in English and Mandarin, 28.3% in English only, and 36% in Mandarin only.

As many as 352 (93.12%) parents indicated that they were actively involved in teaching their children at home. While it is encouraging that so many parents are so fully and directly involved with their children's education, it is important that their efforts supplement or complement, and not duplicate or conflict with, what the teachers are doing. Table 15 shows what they taught.

Table 15: What Parents Teach Children at Home

Type	No. (& Percent)
Reading (English)	226 (59.8)
(Chinese)	224 (59.3)
Writing (English)	225 (69.5)
(Chinese)	243 (64.3)
Songs (English)	101 (26.7)
(Chinese)	94 (24.9)
Alphabet ABC	139 (36.8)

7.3 QUESTION 3: HOW ARE THE PERCEIVED LANGUAGE ENVIRONMENTS AT HOME RELATED TO CHILDREN'S PERFORMANCE IN THE TWO LANGUAGES?

If language environment at home should affect children's performance in the two languages, what matters most is what language(s) each child perceives to be used at home. In the child's interview, there were 15 questions which attempted to find out the child's perception of the language(s) used in different situations at home. The questions are as follows:-

Q4:	*What language(s) do you speak?*
Q5:	*What language do you use MOST OFTEN at home?*
Q9:	*When you play with* (Answer to Q.8), *what language(s) do you use?*
Q10.1:	*When you play with friends in school, what language do you use MOST OFTEN?*
Q11.1:	*Are the books in English or Chinese or Both?*
Q12.1:	*Are the books you read in English, Chinese or Both?*
Q13.1:	*(Does your father/mother tell you stories?) Are the stories in English or Chinese or Both?*
Q14.1:	*(Does your father/mother read you stories?) Are the stories in English or Chinese or Both?*
Q15.1:	*Do you write in English or Chinese or Both (at home)?*
Q16.1:	*Do you watch MORE English or MORE Chinese TV programmes?*
Q17.1:	*Do you listen to MORE English or MORE Chinese songs (at home)?*
Q18.1:	*(Do your parents sing with you?) Are the songs in English or Chinese or Both?*
Q19.0:	*Do you like to learn English?*
Q20.0:	*Do you like to learn Chinese?*
Q21.0:	*Which do you like MORE: English or Chinese?*

The qualitative responses were converted into what are termed as "dummy variables" in order that some quantitative analysis may be carried out. For example, for Q4, three dummy variables, "var 1", "var 2" and "var3", were used as follows:-

Response	var 1	var 2	var 3
English	1	0	0
Mandarin	0	1	0
Both/Bilingual	0	0	1

The resulting 48 variables were subjected to a type of analysis called "Factor Analysis" which clusters the variables that are closely associated, positively or negatively, with each other into distinct "factors." The first major factor turns out to be what is termed as a "bipolar" factor and "loaded" with most of the variables - those showing the use of English were at one pole, while those showing the use of Mandarin were at the opposite pole. The factor therefore shows an "*English versus Mandarin conducive environment.*" The second major factor is "loaded" with a smaller group of variables which show the use of both languages, or an "*English and Mandarin bilingual environment.*"

Using a type of analysis called "Regression Analysis", we have also established that the factors pertaining to home language environment are significantly related to performance in both English and Chinese language tests. However, details of this analysis as well as of factor analysis will not be presented in this paper.

This exploratory analysis gave support for classifying each child according to the proportion of questions to which they indicated the use of English, Mandarin or Both. It may be noted that there were very few responses which indicated the use of Dialect and hence these responses were lumped together with those showing the use of Mandarin. The following 10 main categories of "language environment" resulted from this process:-

Category	Proportion of questions showing use of: English	Mandarin	Both	Number (& percentage) of children (i.e. Bilingual)
E = predominantly English	Much more than 33%	Less than 33%	Less than 33%	38 (10.1)
Eb = mainly English plus some Bilingual	Much more than 33%	Less than 33%	More than 33%	49 (13.0)
Em = mainly English plus some Mandarin	Much more than 33%	More than 33%	Less than 33%	11 (2.9)
M = predominantly Mandarin	Less than 33%	Much more than 33%	Less than 33%	48 (12.7)
Mb = mainly Mandarin plus some Bilingual	Less than 33%	Much more than 33%	More than 33%	70 (18.5)
Me = mainly Mandarin plus some English	More than 33%	Much more than 33%	Less than 33%	42 (11.1)
B = predominantly Bilingual	Less than 33%	Less than 33%	Much more than 33%	10 (2.6)
Be = mainly Bilingual plus some English	More than 33%	Less than 33%	Much more than 33%	52 (13.8)
BE = mainly Bilingual and English	More than 33%	Less than 33%	More than 33%	21 (5.6)
Bm = mainly Bilingual plus some Mandarin	Less than 33%	More than 33%	Much more than 33%	47 (12.4)

As pointed out earlier, what matters most is what the **child perceives**, rather than what **parents perceive**, the language environment to be. Although many of the pairs of child and parent perceptions are similar, there are some differences, especially resulting from having more parents, compared with children, indicating the use of Dialect. For the parents, the following six main categories of language environment were discerned:-

Category	Proportion of questions showing use of: English	Mandarin	Dialect	Both	No.(& percentage) of parents
E = predominantly English	Much more than 33%	Less than 33%	Less than 33%	Less than 33%	72 (19.0)
Eb = mainly English plus some Bilingual	Much more than 33%	Less than 33%	Less than 33%	More than 33%	31 (8.2)
M = predominantly Mandarin	Less than 33%	Much more than 33%	Less than 33%	Less than 33%	158 (41.8)
Mb = Mainly Mandarin plus some Bilingual	Less than 33%	Much more than 33%	More than 33%	Less than 33%	73 (19.3)
B = predominantly Bilingual	Less than 33%	Less than 33%	Much more than 33%	Less than 33%	25 (6.6)
D = predominantly Dialect	Less than 33%	Less than 33%	Less than 33%	Much more than 33%	19 (5.0)

If we collapse the categories into 4 (**E, M, B** and **D**) for the parents and 3 (**E, M,** and **B**) for the children, we find that only for 196 (51.85%) cases the perceptions of the parents and their children were similar, as shown in **Table 16** below:-

Table 16: Comparison of Parent-Child Perceptions of Language Environments

PARENT'S PERCEPTION as being largely:	CHILD'S PERCEPTIONS as being largely: E	M	B	Total
E	60 (15.87%)	11 (2.91%)	32 (8.47%)	103 (27.25%)
M	24 (6.35%)	125 (33.07%)	82 (21.69%)	231 (61.11%)
B	9 (2.38%)	5 (1.32%)	11 (2.91%)	25 (6.61%)
D	5 (1.32%)	9 (2.38%)	5 (1.32%)	19 (5.03%)
Total	98 (25.40%)	150 (39.68%)	130 (34.39%)	378 (100%)

Table 16 also shows that more children (34.39%) perceive their environment to be Bilingual than their parents (6.61%). For this paper, however, we will confine our analysis to comparing the children's, rather than their parents', perceived language environment with their performances in the two languages.

GENERAL FINDINGS.

Figure 6a compares the ten categories of children, according to their perceived language environment - E, Eb, Em, M, Mb, Me, B, Be, BE, and Bm - , for each of the English language ability tests - English Vocabulary, English Listening Comprehension, English Story Comprehension, Translation to English from Mandarin and English Verbal Fluency. Some general observations may be made as follows:-

* Children from a predominantly Mandarin environment (M) were invariably the lowest in performance, while those with a mainly Mandarin environment (Mb and Me) were among the lowest.

* Children from predominantly or mainly English environments (E, Eb and Em) are not necessarily among the top in performance.

* Children from predominantly or mainly Bilingual environments (B, Be, BE and Bm), especially those with more than one third of the questions showing an English environment as well (Be and BE) are near the top in performance.

* Differences in performance between children from largely Mandarin environmnents and the top performing children are significant in all tests, except Listening Comprehension test.

The situation is even more apparent if we collapse the categories into just three (E, M and B), as shown in **Figure 6b**.

Figure 7a similarly compares the ten categories of children, according to their perceived language environment - E, Eb, Em, M, Mb, Me, B, Be, BE, and Bm -, for each of the Chinese language ability tests - Chinese Vocabulary, Chinese Listening Comprehension, Chinese Story Comprehension, Translation to Mandarin from English and Chinese Verbal Fluency. Some general observations may be made as follows:-

* Children from a predominantly English environment (E) were lowest in performance for practically all the tests, while those with a mainly English environment (Eb and Em) were among the lowest.

* Children from predominantly or mainly Mandarin environments (M, Mb and Me) were not necessarily among the top in performance.

* Children from predominantly or mainly Bilingual environments (B, Be, BE and Bm), especially those with more than one third of the questions showing a Mandarin environment as well (Bm), were near the top in performance for most of the tests.

Figure 6a COMPARISON OF ENGLISH LANGUAGE ABILITY BY LANGUAGE ENVIRONMENT

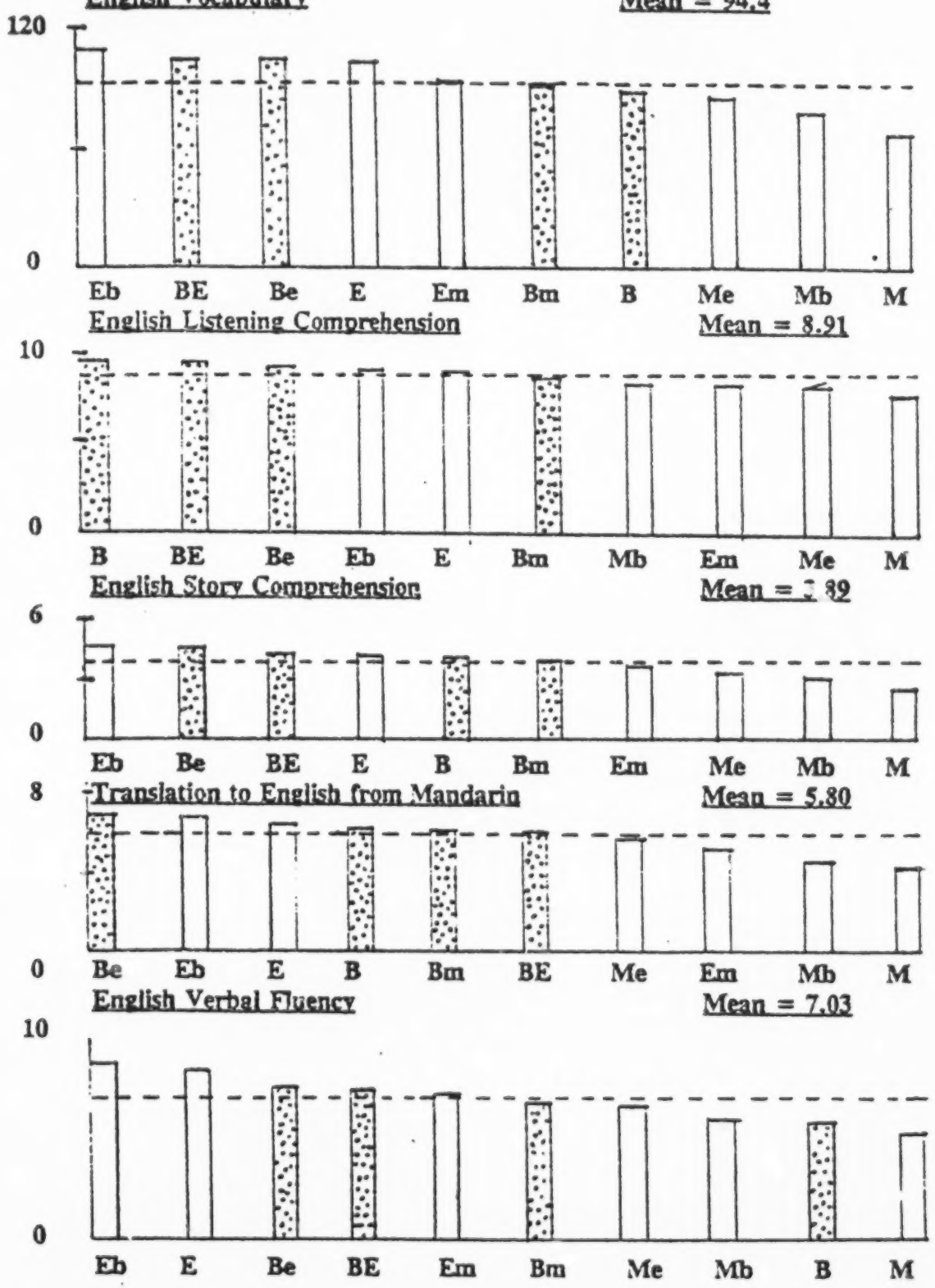
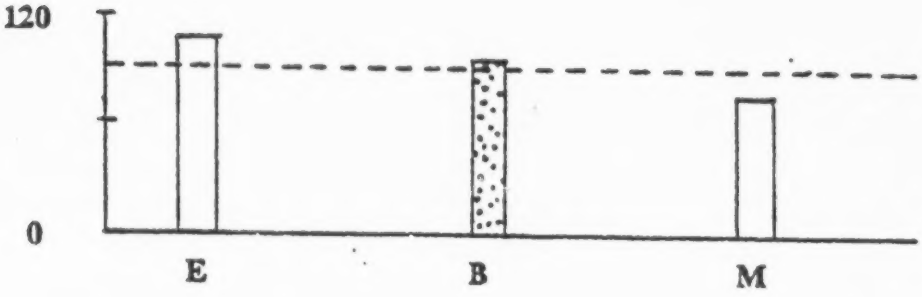
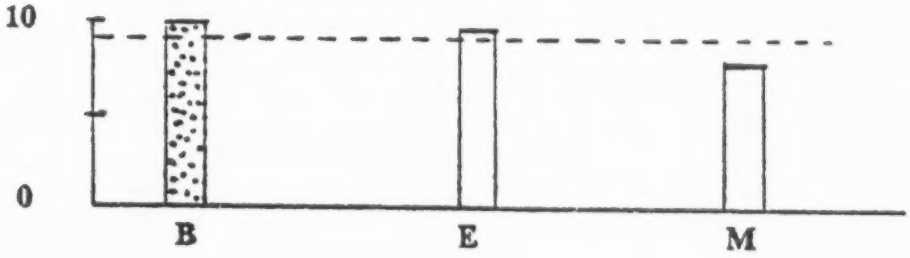


Figure 6b COMPARISON OF ENGLISH LANGUAGE ABILITY BY LANGUAGE ENVIRONMENT

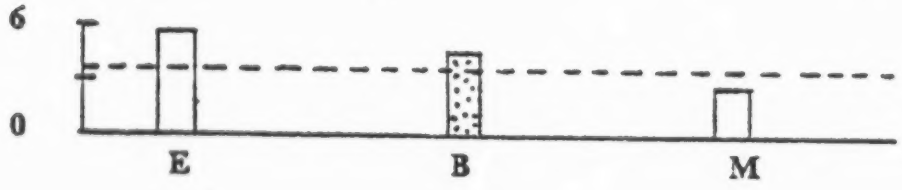
English Vocabulary — Mean = 94.4



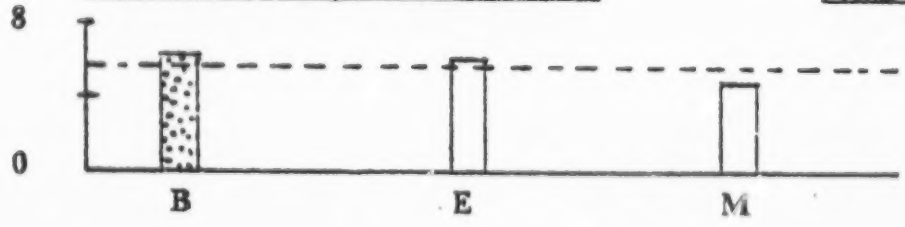
English Listening Comprehension — Mean = 8.91



English Story Comprehension — Mean = 3.89



Translation to English from Mandarin — Mean = 5.80



English Verbal Fluency — Mean = 7.03

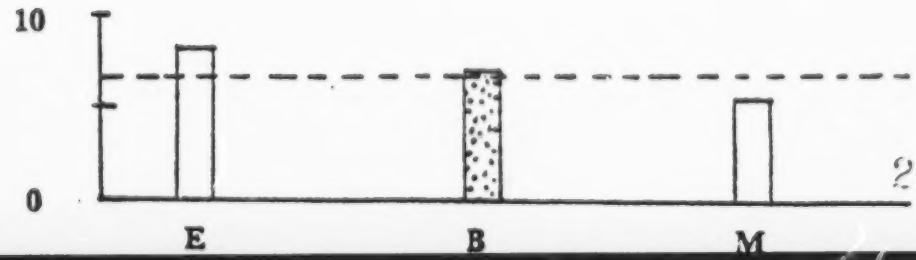
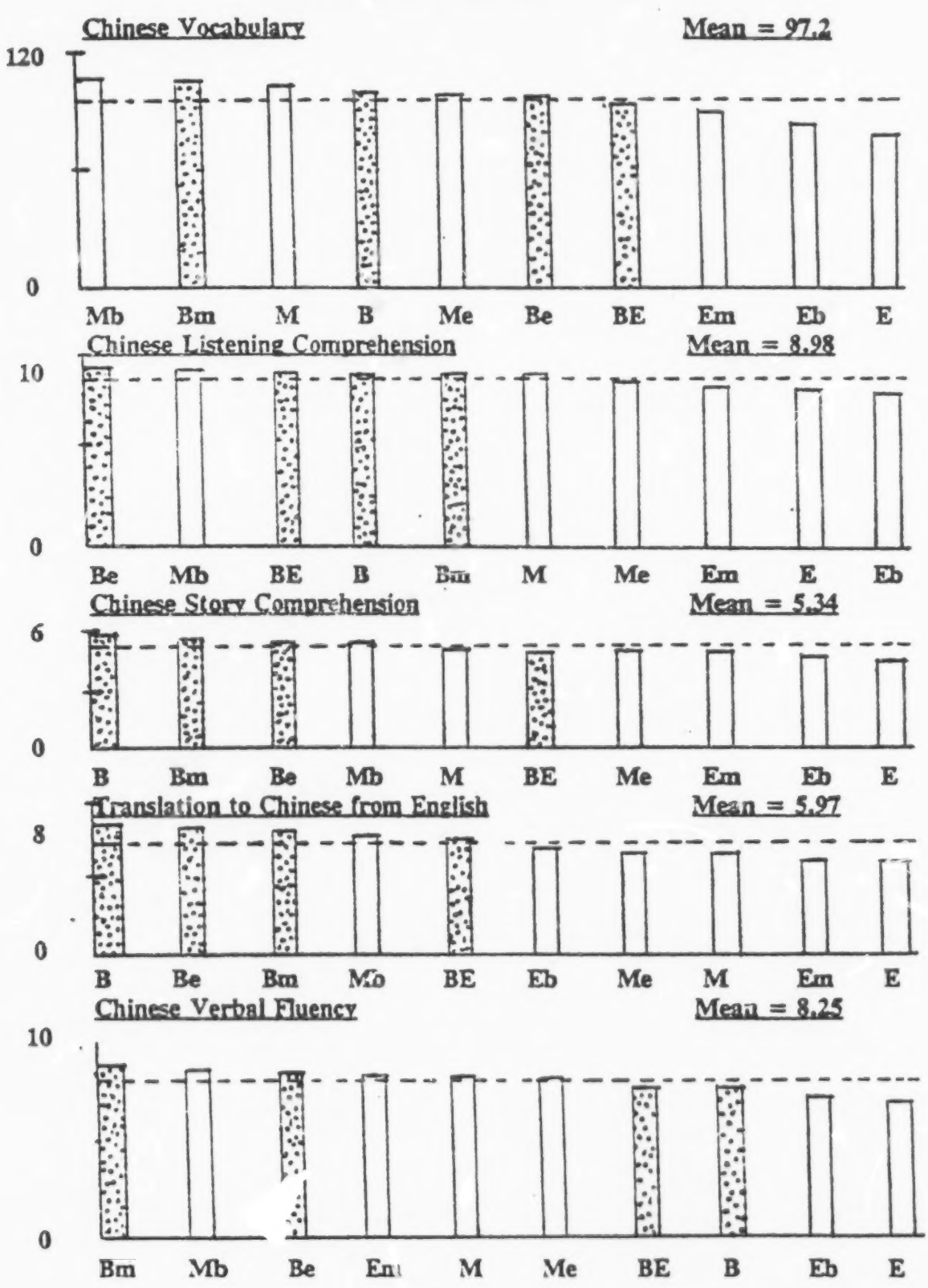


Figure 7a COMPARISON OF CHINESE LANGUAGE ABILITY BY LANGUAGE ENVIRONMENT



BEST COPY AVAILABLE

* Differences in performance between children from largely English environmnents and the top performing children are however significant only with regard to the Vocabulary test.

Again the situation becomes even more obvious when we collapsed the categories into just three (E, M and b), as shown in Figure 7b.

It is therefore very apparent that environments that are largely English or Mandarin would not be conducive to performance in both languages and that homes should strive towards an optimal bilingual environment, in which both languages are used in communication interpersonally as well as through the different media and resource materials.

8.0 RECOMMENDATIONS

We will now attempt to pool together the main findings in order to respond to the fourth research question, namely:

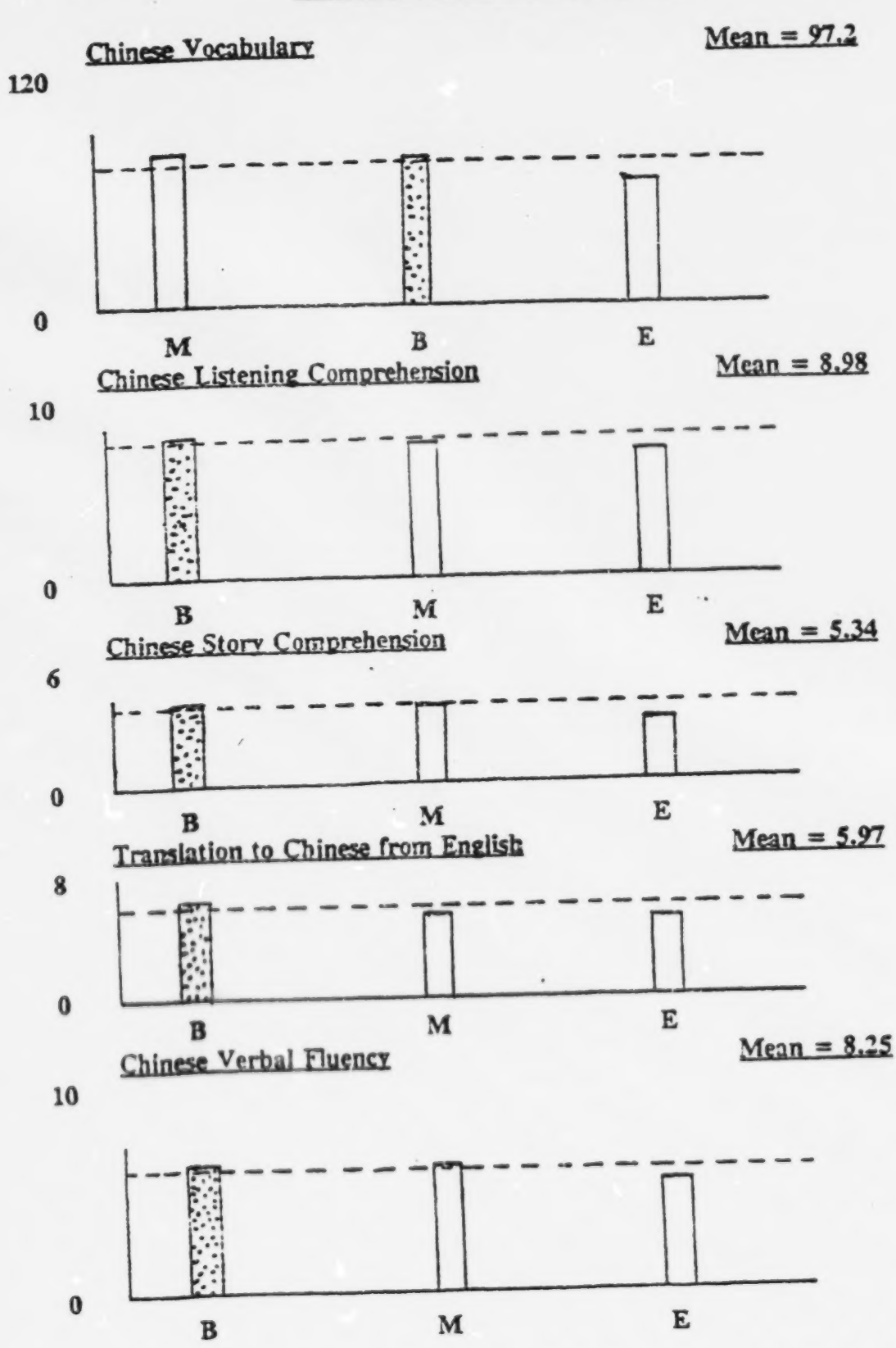
Q4: HOW CAN PARENTS BE INVOLVED EFFECTIVELY IN HELPING THEIR CHILDREN LEARN TWO LANGUAGES?

For our purpose, we will identify three Major findings and discuss their implications.

Major finding No. 1: *Children who perceive their home environment to be either predominantly or mainly **Bilingual** produce optimal performances in both English and Chinese language tests, whereas those who perceive their home environment to be largely English or Chinese would invariably be among the lowest in performance in the other language (i.e. Chinese or English, respectively), while not necessarily being at the top in tests using the preferred language.*

It is therefore **recommended** that parents re-examine their home language environment in terms of not only the language(s) spoken predominantly or mainly, but also in terms of the opportunities for exposure to mass media (e.g. TV) and resource materials (e.g. books) in both languages. They should be reasonably satisfied that the home language environment is not largely English nor largely Chinese, but preferably **Bilingual.** The saving grace is that children generally regard their home language environment to be more Bilingual than their parents, some of whom even perceive their home language environment to be largely Dialect, even though their children tend to characterise it as largely Mandarin. It is in fact reassuring that, in line with the language policy ("*Speak Mandarin*" Campaign), parents who are more comfortable with Dialects have apparently made conscious efforts to confine the use of Dialect to communication between themselves and other adults and instead endeavour to use Mandarin largely with their children.

Figure 7b, COMPARISON OF CHINESE LANGUAGE ABILITY BY LANGUAGE ENVIRONMENT



Apart from those who are in a position to practise the "*one-person-one-language*" and the "*one-person-two/more-languages*" strategies, parents who feel that their home language environments are not sufficiently Bilingual should attempt, in the first instance, to become more bilingual themselves. We assume that most parents of pre-school children are fairly young and should have little difficulty developing greater proficiency in their weaker language. They should not be afraid to learn with their child, who will be encouraged by their eagerness to learn.

Major finding No. 2: *Most parents are actively involved in helping their children develop language ability either indirectly, as in buying and/or borrowing books in English and/or Chinese, or directly by teaching, reading and/or telling stories to their children.*

Again, it is recommended that parents need to re-examine whether they are helping their children develop Bilingual, and not largely English nor largely Chinese, ability. As far as possible, children should be exposed to books and other reading materials in both languages. Parents who are not effectively bilingual themselves should invest in bilingual story books or dictionaries. If they teach, read and/or tell stories to their children mainly in one language, they should make an effort to look for alternative ways of exposing their children to the other language, especially to good language models, such as through carefully selected TV and radio programmes, video and audio casette tapes, karaoke or sing-along tapes, or even private tutors, if needs be. In some cases, the children themselves can lend a helping hand, if, in the course of teaching, reading and/or telling stories to them, the parents pause occasionally to ask them for the equivalent words in the other language. Parents need not be diffident or embarassed about admittting that they do not know enough of the other language and need their children's assistance. It is perhaps likely that the children might even be motivated to strengthen their proficiency in the other language on which their parents need to seek their help.

Parents should however not get carried away with over-enthusiatic efforts to teach their children, without taking into account what the teachers are already doing. Hence, although it is encouraging that a very large majority of parents (93.12%) teach their children at home, it is pertinent to raise the question of whether their efforts and those of the teachers are mutually supportive or in conflict with each other. This calls for some co-ordination or collaboration between parents and teachers so as not to subject the children to undue stress.

Major finding No. 3: *While children perform quite well in all the language tests, there are important differences in certain corresponding aspects of English and Chinese, which could affect interlanguage transfer, as well as some common areas of weakness in both languages.*

It is recommended that both teachers and parents, who are bilingual, should re-examine the assumptions they make, implicitly or explicitly, regarding the correspondence between items or aspects in English and Chinese, so that what might seem to be simple or familiar in one language need not be so in the other language. It is perhaps most critical to the balanced development of bilingual ability in children that

there should be comparability in the extent to which they acquire language competence in both English and Chinese, as well as opportunities for them to compare the two languages in order to avoid negative transfers and facilitate positive transfers from one language to the other. For example, while providing opportunities to familiarise them with vocabulary in both languages, there is need to closely monitor the situation in order to ensure that they do not neglect certain categories of vocabulary in any one language, such as *Food* and *Actions* words in English and *Shapes* and *Animals* words in Chinese. The monitoring of bilingual language development, including an assessment of children's perception of their home language environment, which is apparently related closely to their development of language ability, would require even closer collaboration between parents and teachers, and perhaps including interested researchers, such as the current members of the NIE-BvLF team as well.

The collaborative efforts of parents, teachers and researchers should also address those areas where children show particular weaknesses, such as in producing complete and grammatically correct sentences. Although at the pre-school level it may be too much to expect children to produce complete and grammatically correct sentences all the time, they should at least be exposed to correct language usage, as far as possible. A comparable situation is that of parents who inadvertently stifle language development of babies by constantly imitating "baby talk" instead of communicating with them in proper language. Besides receptive learning, such as reading and listening to stories, especially those that are interesting and have a familiar theme, there should be opportunities for productive learning, such as in encouraging them to talk by providing a variety of stimuli e.g. plays, stories, drawings and events.

- THE END -

LIST OF TASKS AND ITEMS

A. **VOCABULARY** (English & Chinese)

1. **Animals:** dog, cat, elephant, rabbit, monkey, giraffe
2. **Food:** egg, sweet, rice, biscuit, bread, noodles
3. **Utensils:** spoon, cup, knife, plate, bowl, chopsticks
4. **Home (Electrical Appliances):** telephone, clock, television, fan, lamp/light, iron
5. **Clothes:** shoes, socks, dress/frock, shorts, cap, belt
6. **Shapes:** circle, triangle, square, oval/egg, rectangle/oblong, heart
7. **Colours:** blue, red, yellow, black, green, white
8. **Body Parts:** eyes, nose, mouth/lips, ears, hand/fingers, foot/toes
9. **Actions:** eating, drinking, walking, sitting, sleeping, climbing

B. **LISTENING COMPREHENSION** (English & Chinese)

1. Stand up
2. Point to the cup
3. Take the paper, put it in the box and give them to me
4. Take this crayon and paper and draw in the eyes. Colour the picture

C. **STORY COMPREHENSION** (English)

1. What is the name of Mei Mei's pussy cat?
2. Where did Kitty go?
3. Why did Mei Mei cry?
4. Who telephoned Mei Mei?
5. What did Ali want to do?
6. What must Mei Mei always remember to do?

D. **STORY COMPREHENSION** (Chinese)

1. 今天是谁的生日?
2. 姐姐送什么礼物给小华?
3. 皮球是谁送的?
4. 当人家送礼物给小华时，小华怎么说?
5. 爸爸去了哪里?
6. 小华最喜欢哪一样礼物?

APPENDIX 1

E. **TRANSLATION** (English)
1. Play
2. Telephone
3. Happy
4. Close the door
5. Mei Mei has a cat

F. **TRANSLATION** (Chinese)
1. 吃
2. 喜欢
3. 忘了
4. 猫猫爸爸
5. 大家要吃蛋糕

G. **VERBAL FLUENCY** (English & Chinese)
Four picture cards are presented to the child. They show the following:
1. A little girl going for a walk in the park with her parents.
2. She is running towards the objects that catch her attention.
3. She is tripping over a stone.
4. She is crying.

MAXIMUM SCORES FOR THE TASKS

		English	Chinese
A.	Vocabulary	126	126
B.	Listening Comprehension	10	10
C.	Story Comprehension	6	6
D.	Translation	9	9
E.	Verbal Fluency	13	13
	TOTAL	164	164

- THE END -